



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,378	07/29/2003	Atsuo Tanaka	116709	4324
25944	7590	11/30/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			NGUYEN, CHAU N	
			ART UNIT	PAPER NUMBER
			2831	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/628,378	Applicant(s) TANAKA, ATSUO	
	Examiner Chau N Nguyen	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 24, 28 and 29 are objected to because of the following informalities:
in claim 24, line 5; in claim 28, line 6; and in claim 29, line 5, delete the phrase
"the group of". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for
all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 9, 10, 27 and 28 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Tsao et al. (6,444,902) in view of Olyphant, Jr. (4,475,006) and
Sato et al. (6,417,445).

Tsao et al. discloses (Figure 3) a shielded flat cable comprising a plurality of
signal wires each having a conductor coated with insulating layer, a drain wire
(36), a shielding layer (32) covering an outer periphery of the signal wires and the
drain wire, and an insulating sheath (39) covering an outer periphery of the

shielding layer, wherein the signal wires and the drain wire are juxtaposed to one another in closely-contacted relation to one another. Tsao et al. does not disclose a substantive total cross-sectional area of the conductor of each of the signal wire being in a range of from 0.03 mm^2 to 0.13 mm^2 nor at least the outermost signal wire being made of copper alloy (re claims 1, 3 and 28). Olyphant, Jr. discloses a shielded ribbon cable comprising signal wires each having a total cross-sectional area of 0.03 mm^2 to 0.08 mm^2 (32 AWG wire, col. 11, lines 23-24) (re claim 4). It would have been obvious to one skilled in the art to use conductor having a total cross-sectional area of 0.03 mm^2 to 0.08 mm^2 for the conductor of Tsao et al. to provide a balance between electrical and mechanical characteristics as taught by Olyphant, Jr. Sato et al. discloses an insulated wire comprising a conductor being made of an alloy of copper and silver including 2.5% by weight to 5.5% by weight of silver (col. 10, lines 41-44) (re claims 5 and 6). It would have been obvious to one skilled in the art to use the alloy taught by Sato et al. for the signal wires of Tsao et al. since the alloy taught by Sato et al. provides both tensile strength and electrical conductivity.

The modified cable of Tsao et al. also discloses the drain wire being provided at one of ends of the signal wires (re claim 2), the conductor of each signal wire being made of a single wire (re claim 10), the plurality of wires being

juxtaposed to form a group of juxtaposed signal wires with a first juxtaposed signal wire and a last juxtaposed signal wire, wherein the drain wire is juxtaposed to the last juxtaposed signal wire, and wherein at least the first juxtaposed signal wire is made of copper alloy (re claim 27). Re claim 9, it would have been obvious to one skilled in the art to modify the single wire conductor of Tsao et al. to be stranded wire conductor since stranded wire conductor is well-known in the art for being used as signal wire.

4. Claims 7, 8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Olyphant, Jr. and Sato et al. as applied to claim 1 above, and further in view of JP411111070 (JP'070).

Claims 7 and 8 additionally recite the conductor of at least the outermost signal wire being made of Cu-Ni-Si alloy which includes 2.0% to 3.0% by weight of Ni and 0.4% to 0.8% by weight of Si.

JP'070 discloses a bendable flat cable comprising a conductor which is made of Cu-Ni-Si alloy including 2.0% to 3.0% by weight of Ni and 0.4% to 0.8% by weight of Si and having a tensile strength of 500 to 1400 N/mm² and an elongation of 5% to 15% (re claims 11 and 12). It would have been obvious to one skilled in the art to use the copper alloy as taught by JP'070 for at least the outermost signal

wire of Tsao et al. since the alloy taught by JP'070 provides good tensile strength, elongation and flexibility.

5. Claims 13, 14, 17, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Kawai (6,303,868).

Tsao et al. discloses a shielded flat cable (Fig. 3) comprising a plurality of signal wires (34) each having a conductor coated with insulating layer, a drain wire (36), a shielding layer (32) covering an outer periphery of the signal wires and the drain wire, and an insulating sheath (39) covering an outer periphery of the shielding layer, wherein the signal wires and the drain wire are juxtaposed to one another in closely-contacted relation to one another (re claim 13). Tsao et al. also discloses the drain wire being provided at one of ends of the signal wires (re claim 14).

Tsao et al. does not disclose the conductor of at least the outermost signal wire comprising a linear central wire element disposed at a longitudinal axis of the conductor, and peripheral wire elements (re claim 17) stranded around the central wire therealong, wherein the central wire element is made of copper, and wherein the peripheral wire elements are made of copper alloy (re claim 13).

Kawai discloses an insulated wire comprising a conductor which is comprised of a linear central wire element (2) disposed at a longitudinal axis of the conductor, and peripheral wire elements (3) stranded around the central wire therealong, wherein the central wire element is made of copper (annealed copper), and wherein the peripheral wire elements are made of copper alloy (beryllium copper). It would have been obvious to one skilled in the art to use the conductor taught by Kawai for at least the outermost conductor of Tsao et al. since the conductor taught by Kawai provides sufficient conductivity and strength.

The modified cable of Tsao et al. also discloses the plurality of signal wires being juxtaposed to form a group of juxtaposed signal wires with a first juxtaposed signal wire and a last juxtaposed signal wire, wherein the drain wire is juxtaposed to the last juxtaposed signal wire, and wherein at least the first juxtaposed signal wire in the group includes a linear central wire element disposed at a longitudinal axis of the conductor and a peripheral wire element stranded around the central wire element therealong (re claims 26 and 29).

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Kawai as applied to claim 13 above, and further in view of Olyphant, Jr.

Claims 15 and 16 additionally recites each conductor of each signal wire having a total cross-sectional area of 0.03 mm^2 to 0.08 mm^2 . Olyphant, Jr. discloses a shielded ribbon cable comprising signal wires each having a total cross-sectional area of 0.03 mm^2 to 0.08 mm^2 (32 AWG wire, col. 11, lines 23-24). It would have been obvious to one skilled in the art to use conductor having a total cross-sectional area of 0.03 mm^2 to 0.08 mm^2 for the conductor of Tsao et al. to provide a balance between electrical and mechanical characteristics as taught by Olyphant, Jr.

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Kawai as applied to claim 13 above, and further in view of Sato et al.

Sato et al. discloses an insulated wire comprising a conductor being made of an alloy of copper and silver including 2.5% by weight to 5.5% by weight of silver (col. 10, lines 41-44). It would have been obvious to one skilled in the art to use the alloy taught by Sato et al. for the signal wires of Tsao et al. since the alloy taught by Sato et al. provides both tensile strength and electrical conductivity.

8. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Kawai as applied to claim 13 above, and further in view of JP'070.

Claims 20 and 21 additionally recite the conductor of at least the outermost signal wire being made of Cu-Ni-Si alloy which includes 2.0% to 3.0% by weight of Ni and 0.4% to 0.8% by weight of Si.

JP'070 discloses a bendable flat cable comprising a conductor which is made of Cu-Ni-Si alloy including 2.0% to 3.0% by weight of Ni and 0.4% to 0.8% by weight of Si and having a tensile strength of 500 to 1400 N/mm² and an elongation of 5% to 15% (re claims 22 and 23). It would have been obvious to one skilled in the art to use the copper alloy as taught by JP'070 for peripheral wire elements in the modified Tsao et al. cable since the alloy taught by JP'070 provides good tensile strength, elongation and flexibility.

9. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsao et al. in view of Sato et al.

Tsao et al. discloses (Figure 3) a shielded flat cable comprising a plurality of signal wires each having a conductor coated with insulating layer, a drain wire (36), a shielding layer (32) covering an outer periphery of the signal wires and the

drain wire, and an insulating sheath (39) covering an outer periphery of the shielding layer, wherein the signal wires and the drain wire are juxtaposed to one another in closely-contacted relation to one another. Tsao et al. does not disclose the conductor of at least the outermost signal wire being made of a copper alloy (re claim 24). Sato et al. discloses an insulated wire comprising a conductor being made of an alloy of copper. It would have been obvious to one skilled in the art to use the alloy taught by Sato et al. for the signal wires of Tsao et al. since the alloy taught by Sato et al. provides both tensile strength and electrical conductivity. The modified cable of Tsao et al. also discloses the plurality of wires being juxtaposed to form a group of juxtaposed signal wires with a first juxtaposed signal wire and a last juxtaposed signal wire, wherein the drain wire is juxtaposed to the last juxtaposed signal wire, and wherein at least the first juxtaposed signal wire is made of copper alloy (re claim 25).

Response to Arguments

10. Applicant's arguments with respect to claims 1, 13, 24, 28 and 29 have been considered but are moot in view of the new ground(s) of rejection.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chau N Nguyen
Primary Examiner
Art Unit 2831